

# SuperNine® Glass seal hermetic



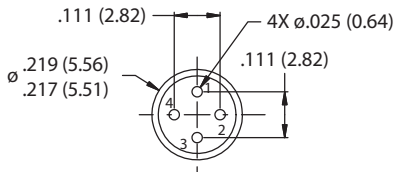
## MIL-DTL-38999 Series III Type

### 233-261 Bulkhead feed-thru with shielded contacts

HERMETIC CONNECTORS

Part Number Development												
Sample Part Number	233-261				-H2	Z1	17	Q	-02	S	N	-01
Series / Basic Part No.	Series 23 SuperNine Bulkhead Feed-thru											
Connector Style	H2 = Box Mount H7 = Jam-Nut Mount DH7 = Dual O-ring, Jam-Nut Mount H8 = Weld Mount											
Finish*	Z1 = CRES, Passivated ZL = CRES, Nickel Finish											
Shell Size	Per MIL-DTL-38999											
Contact Type	C = Coax Q = Quadrax (Size 8 contacts only) T = Concentric Twinax P = Power Contacts See Special RF contact arrangements beginning on page D-6 for more details											
Arrangement	Per MIL-STD-1560											
Configuration	P = Pin on Jam Nut Side S = Socket on Jam Nut Side PP = Pin-Pin (See note 2) SS = Socket-Socket (See note 2)											
Polarization*	A, B, C, D, E, N = Normal; see section A for key position details											
Panel Thickness	-01 = .125/.062 -02 = .250/.062 -03 = .500/.062; See Panel Thickness Table											

\*Refer to Section A for complete details, consult factory for additional options  
Modification codes may be added directly to the end of any valid part number



Quadrax Pin Interface  
(Cavity Id Refer. Only)  
For 100 Ohm Nominal Impedance

Contact Performance	
Size and Type	Frequency
#12 Coax	2 GHz
#8 Coax	1 GHz
#8 Twinax (Conc.)	20 MHz
#8 Quadrax	1 GHz

Shell Size / Insert Arrangement Availability <sup>3,4</sup>										
Arr. No.	Size 22	Cntct Type	Size 20	Cntct Type	Size 16	Cntct Type	Size 12	Cntct Type	Size 8	Cntct Type
15-21	17	S/P	3	S/P	---	N/A	1	N/A	---	N/A
17-2*	38	S/P	---	N/A	---	N/A	---	N/A	1	TWINAX
17-3*	38	S/P	---	N/A	---	N/A	---	N/A	1	TWINAX
17-6	---	N/A	---	S/P	---	N/A	6	COAX	---	N/A
17-11	---	N/A	8	N/A	---	N/A	3	COAX	---	N/A
19-19	14	S/P	---	N/A	---	N/A	---	N/A	---	TWINAX
21-11	---	N/A	---	N/A	---	N/A	11	N/A	---	N/A
21-29	---	N/A	19	S/P	4	S/P	4	COAX	4	N/A
21-75‡	---	N/A	---	N/A	---	N/A	---	COAX	4	TWINAX
21-76‡	---	N/A	---	N/A	---	N/A	---	N/A	2	TWINAX
25-7†	---	S/P	---	N/A	---	N/A	---	N/A	8	TWINAX
25-80	97	N/A	---	N/A	---	N/A	---	N/A	2	TWINAX
25-9†	---	S/P	---	N/A	---	N/A	---	N/A	8	TWINAX
25-100	97	N/A	---	N/A	---	N/A	---	N/A	---	TWINAX
25-19	---	N/A	---	N/A	---	N/A	19	COAX	3	N/A
25-20#	---	N/A	10	S/P	13	S/P	4	COAX	3	TWINAX
25-21#	---	N/A	10	S/P	13	S/P	4	COAX	2	TWINAX
25-46@	---	N/A	40	S/P	4	S/P	---	N/A	2	COAX
25-47@	---	N/A	40	S/P	4	S/P	---	N/A	2	COAX
25-90+	---	N/A	40	S/P	4	S/P	---	N/A	2	TWINAX
25-91+	---	N/A	40	S/P	4	S/P	---	N/A	2	TWINAX

#### Material/Finish

- Shell and jam-nut (H7 and DH7): 300 series CRES/per part number development
- Contact, pin: nickel-iron and nickel alloy/gold plate
- Contact, socket: copper alloy/gold plate
- Hoods, sockets: CRES/passivate
- Insulator, hermetic: full glass/N.A.
- Insulator, socket: rigid dielectric/N.A.
- Seals: fluorosilicone blend elastomer/N.A.

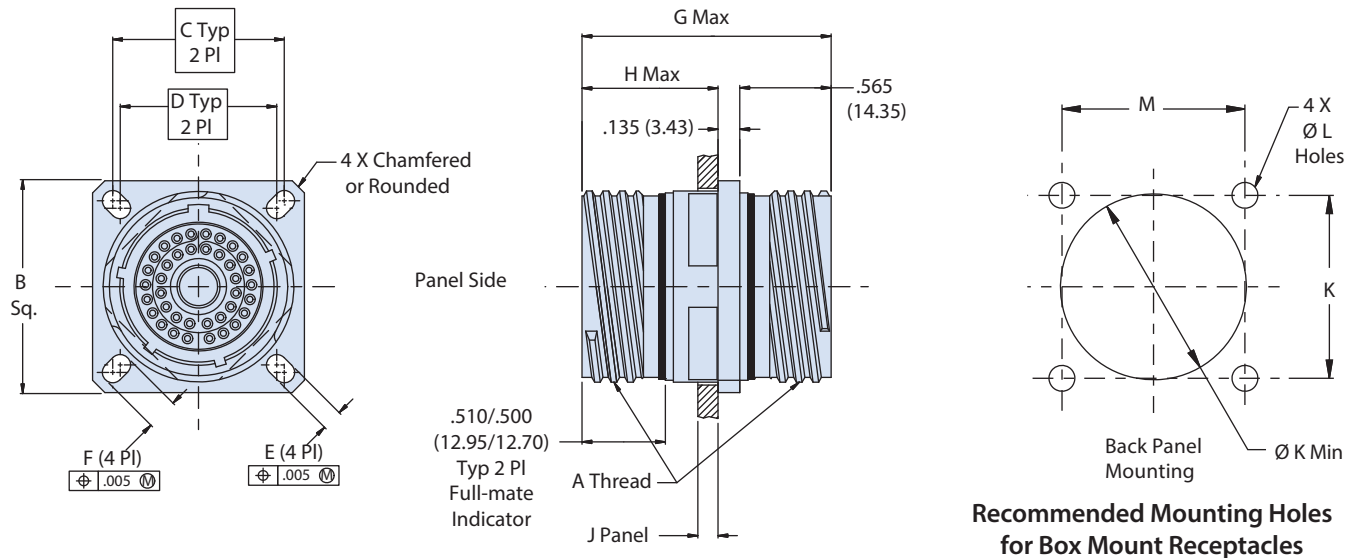
#### NOTES

1. Hermeticity: <math>1 \times 10^{-7}</math> ccHe/sec @ 1 atmosphere delta pressure
2. For PP or SS style, only symmetrical layouts may be selected. Power applied to contact on one side will result in power to the opposite contact, regardless of marking
3. Arrangements marked with like symbols (I.E. 17-2\* and 17-3\*) are identical. Environmental connectors use contact sealing boots.
4. When there are #12 and #8 in arrangement, the option is #8 only. Balance of contacts are power. Consult factory for other contact options.
5. For shell style H2, SS style, dimensions "G" and "H" will increase .100"
6. For shell style H8, SS style, 01 dimensions "E" and "F" increase by .150"

## MIL-DTL-38999 Series III Type

### 233-261 Bulkhead feed-thru with shielded contacts

#### 233-261-H2 BOX MOUNT FEED-THRU CONNECTOR



Recommended Mounting Holes for Box Mount Receptacles

HERMETIC CONNECTORS

Dimensions						
Shell Size	A Thread	B SQ	C Bsc	D BSC	E	F
9	.6250	.949 (24.10)	.719 (18.26)	.594 (15.09)	.136 (3.45)	.224 (5.69)
	-1 P-0.3L-TS-2A	.925 (23.50)				.208 (5.28)
11	.7500	1.043 (26.49)	.812 (20.62)	.719 (18.26)	.136 (3.45)	.202 (5.13)
	-1 P-0.3L-TS-2A	1.019 (25.88)				.186 (4.72)
13	.8750	1.138 (28.91)	.706 (17.93)	.812 (20.62)	.136 (3.45)	.202 (5.13)
	-1 P-0.3L-TS-2A	1.114 (28.30)				.186 (4.72)
15	1.0000	1.232 (31.29)	.969 (24.61)	.906 (23.01)	.136 (3.45)	.181 (4.60)
	-1 P-0.3L-TS-2A	1.208 (30.68)				.165 (4.19)
17	1.1875	1.323 (33.60)	1.062 (26.97)	.969 (24.61)	.136 (3.45)	.202 (5.13)
	-1 P-0.3L-TS-2A	1.299 (32.99)				.186 (4.72)
19	1.2500	1.449 (36.80)	1.156 (29.36)	1.062 (26.97)	.136 (3.45)	.202 (5.13)
	-1 P-0.3L-TS-2A	1.425 (36.20)				.186 (4.72)
21	1.3750	1.575 (40.00)	1.250 (31.75)	1.156 (29.36)	.136 (3.45)	.202 (5.13)
	-1 P-0.3L-TS-2A	1.551 (39.40)				.186 (4.72)
23	1.5000	1.701 (43.21)	1.375 (34.92)	1.250 (31.75)	.162 (4.11)	.250 (6.35)
	-1 P-0.3L-TS-2A	1.677 (42.60)				.234 (5.94)
25	1.6250	1.823 (46.30)	1.500 (38.10)	1.375 (34.92)	.162 (4.11)	.250 (6.35)
	-1 P-0.3L-TS-2A	1.799 (45.69)				.234 (5.94)

Box Mount Dimensions			
Shell Size	Ø K Min	Ø L Holes	M
9	.656 (16.66)	.133 (3.38)	.724 (18.39)
		.123 (3.12)	.714 (18.14)
11	.781 (19.84)	.133 (3.38)	.817 (20.75)
		.123 (3.12)	.807 (20.50)
13	.921 (23.39)	.133 (3.38)	.911 (23.14)
		.123 (3.12)	.901 (22.89)
15	1.047 (26.59)	.133 (3.38)	.973 (24.71)
		.123 (3.12)	.963 (24.46)
17	1.218 (30.94)	.133 (3.38)	1.067 (27.10)
		.123 (3.12)	1.57 (39.88)
19	1.296 (32.92)	.133 (3.38)	1.161 (29.49)
		.123 (3.12)	1.151 (29.24)
21	1.421 (36.09)	.133 (3.38)	1.255 (31.88)
		.123 (3.12)	1.245 (31.62)
23	1.546 (39.27)	.159 (4.04)	1.380 (35.05)
		.149 (3.78)	1.370 (34.80)
25	1.672 (42.47)	.159 (4.04)	1.505 (38.23)
		.149 (3.78)	1.495 (37.97)

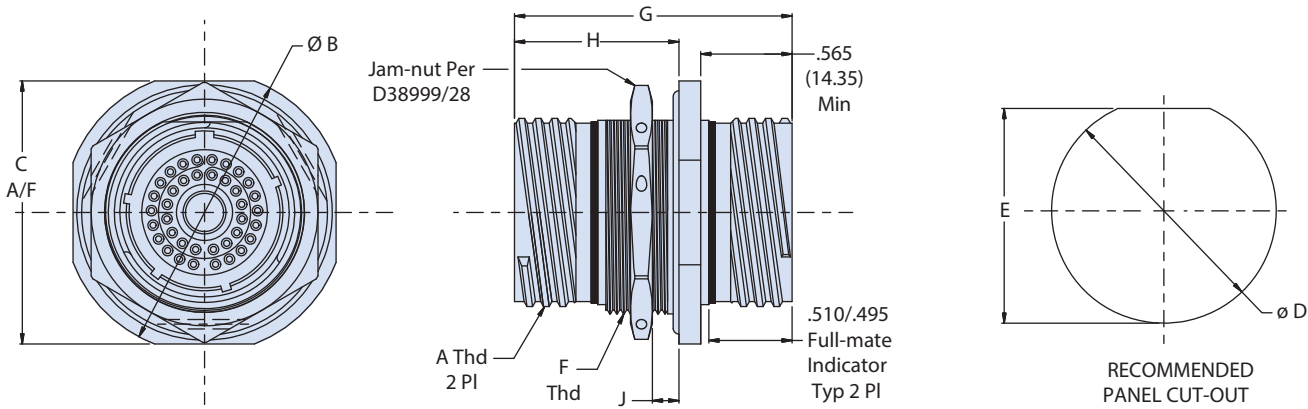
Panel Thickness			
Shell Size	G Dim, OAL Max	H Dim, Max	J Dim, Panel
-01*	1.600 (40.64)	.843 (21.41)	.125 (3.17)/.062 (1.57)
-02	1.730 (43.94)	1.040 (26.42)	.250 (6.35)/.062 (1.57)
-03	2.000 (50.80)	1.290 (32.77)	.500 (12.70)/.062 (1.57)

## MIL-DTL-38999 Series III Type

### 233-261 Bulkhead feed-thru with shielded contacts

HERMETIC CONNECTORS

#### 233-261-H7 JAM-NUT MOUNT FEED-THRU CONNECTOR AND 233-261-DH7 DUAL O-RING JAM-NUT MOUNT FEED-THRU CONNECTOR



Dimensions				
Shell Size	A Thread	D BSC	E	F Thread
9	.6250 -.1 P-0.3L-TS-2A	.703 (17.86) .693 (17.60)	.661 (16.79) .665 (16.89)	M17 x 1.0-6g
11	.7500 -.1 P-0.3L-TS-2A	.835 (21.21) .825 (20.95)	.771 (19.58) .761 (19.33)	M20 x 1.0-6g
13	.8750 -.1 P-0.3L-TS-2A	1.020 (25.91) 1.010 (25.65)	.955 (24.26) .945 (24.00)	M25 x 1.0-6g
15	1.0000 -.1 P-0.3L-TS-2A	1.145 (29.08) 1.135 (28.83)	1.085 (27.56) 1.075 (27.30)	M28 x 1.0-6g
17	1.1875 -.1 P-0.3L-TS-2A	1.270 (32.26) 1.260 (32.00)	1.210 (30.73) 1.200 (30.48)	M32 x 1.0-6g
19	1.2500 -.1 P-0.3L-TS-2A	1.395 (35.43) 1.385 (35.18)	1.335 (33.91) 1.325 (33.65)	M35 x 1.0-6g
21	1.3750 -.1 P-0.3L-TS-2A	1.520 (38.61) 1.510 (38.35)	1.460 (37.08) 1.450 (36.83)	M38 x 1.0-6g
23	1.5000 -.1 P-0.3L-TS-2A	1.645 (41.78) 1.635 (41.53)	1.585 (40.26) 1.575 (40.00)	M41 x 1.0-6g
25	1.6250 -.1 P-0.3L-TS-2A	1.770 (44.96) 1.760 (44.70)	1.710 (43.43) 1.700 (43.18)	M44 x 1.0-6g

Jam-Nut Mount (H7) Dimension		
Shell Size	B DIA	C MAX
9	1.189 (30.20)	1.063 (27.00)
11	1.375 (34.92)	1.252 (31.80)
13	1.500 (38.10)	1.375 (34.92)
15	1.626 (41.30)	1.500 (38.10)
17	1.752 (44.50)	1.626 (41.30)
19	1.937 (49.20)	1.811 (46.00)
21	2.063 (52.40)	1.937 (49.20)
23	2.189 (55.60)	2.063 (52.40)
25	2.311 (58.70)	2.189 (55.60)

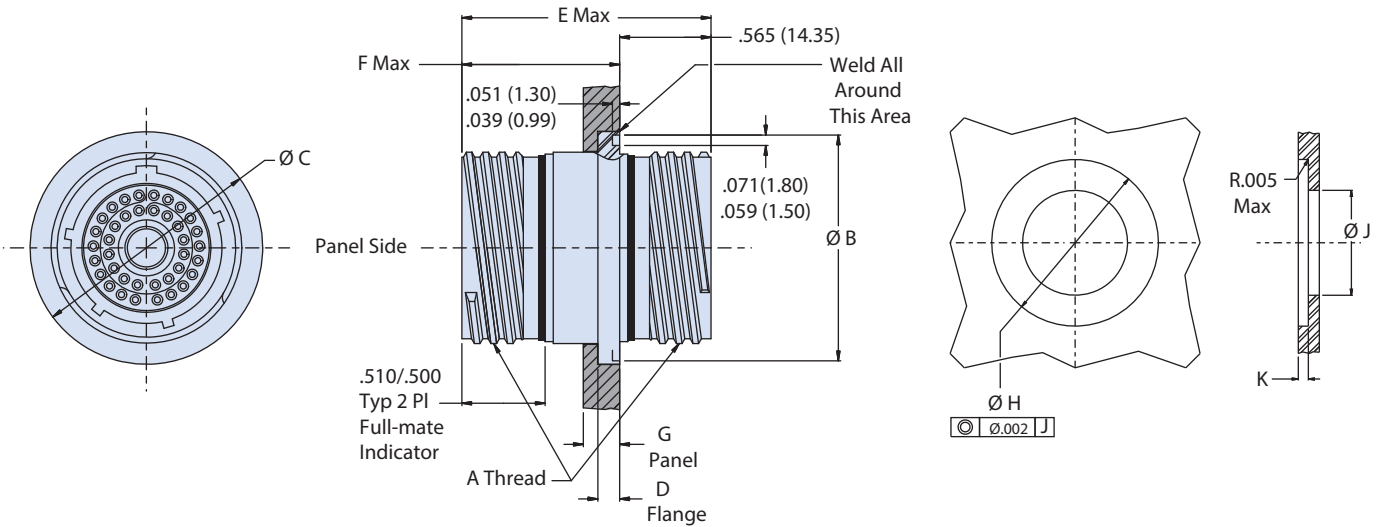
Dual O-ring, Jam-Nut (DH7) Mount Dimension		
Shell Size	B DIA	C MAX
9	1.500 (38.10)	1.375 (34.92)
11	1.625 (41.28)	1.500 (38.10)
13	1.752 (44.50)	1.626 (41.30)
15	1.937 (49.20)	1.811 (46.00)
17	2.063 (52.40)	1.937 (49.20)
19	2.189 (55.60)	2.063 (52.40)
21	2.311 (58.70)	2.189 (55.60)
23	2.500 (63.50)	2.300 (58.42)
25	2.625 (66.68)	2.400 (60.96)

Panel Thickness			
Shell Size	G Dim, OAL Max	H Dim, Max	J Dim, Panel
-01	1.670 (42.42)	.889 (22.58)	.125 (3.17) .062 (1.57)
-02	1.800 (45.72)	1.090 (27.69)	.250 (6.35) .062 (1.57)
-03	2.050 (52.07)	1.340 (34.04)	.500 (12.70) .062 (1.57)

**MIL-DTL-38999 Series III Type**

**233-261 Bulkhead feed-thru with shielded contacts**

**233-261-H8 WELD MOUNT FEED-THRU CONNECTOR**



Panel Thickness			
SHELL SIZE	E DIM, OAL MAX	F DIM, MAX	G DIM, PANEL
-01 <sup>5</sup>	1.520 (38.61)	.960 (24.38)	.125 (3.17)/.062 (1.57)
-02	1.670 (42.42)	1.110 (28.19)	.250 (6.35)/.062 (1.57)
-03	1.920 (48.77)	1.350 (34.29)	.500 (12.70)/.062 (1.57)

Recommended Panel Cutout			
Shell Size	Ø H	Ø J ±.005	DEPTH K ±.005
9	.990/.985 (25.15/ 25.02)	0.635 (16.13)	0.126 (3.20)
11	1.112/1.107 (28.24/28.12)	0.760 (19.30)	0.126 (3.20)
13	1.238/1.233 (28.12/ 31.32)	0.885 (22.48)	0.126 (3.20)
15	1.364/1.359 (34.65/34.52)	1.010 (25.65)	0.126 (3.20)
17	1.451/1.446 (36.86/ 36.73)	1.195 (30.35)	0.126 (3.20)
19	1.597/1.592 (40.56/ 40.44)	1.260 (32.00)	0.126 (3.20)
21	1.738/1.733 (44.15/ 44.02)	1.385 (35.18)	0.126 (3.20)
23	1.894/1.899 (48.11/48.23)	1.510 (38.35)	0.157 (3.99)
25	1.990/1.985 (50.55/ 50.42)	1.635 (41.53)	0.157 (3.99)

Dimensions				
Shell Size	A Thread	Ø B	Ø C	Ø D
9	.6250	.941 (23.90)	.984 (24.99)	.134 (3.40)
	-1 P-0.3L-TS-2A	.929 (23.60)	.972 (24.69)	.118 (3.00)
11	.7500	1.063 (27.00)	1.106 (28.09)	.134 (3.40)
	-1 P-0.3L-TS-2A	1.051 (26.70)	1.094 (27.79)	.118 (3.00)
13	.8750	1.189 (30.20)	1.232 (31.29)	.134 (3.40)
	-1 P-0.3L-TS-2A	1.177 (29.90)	1.220 (30.99)	.118 (3.00)
15	1.0000	1.315 (33.40)	1.358 (34.49)	.134 (3.40)
	-1 P-0.3L-TS-2A	1.303 (33.10)	1.346 (34.19)	.118 (3.00)
17	1.1875	1.402 (35.61)	1.445 (36.70)	.134 (3.40)
	-1 P-0.3L-TS-2A	1.390 (35.31)	1.433 (36.40)	.118 (3.00)
19	1.2500	1.547 (39.29)	1.591 (40.41)	.134 (3.40)
	-1 P-0.3L-TS-2A	1.535 (38.99)	1.579 (40.11)	.118 (3.00)
21	1.3750	1.689 (42.90)	1.732 (43.99)	.134 (3.40)
	-1 P-0.3L-TS-2A	1.677 (42.60)	1.720 (43.69)	.118 (3.00)
23	1.5000	1.854 (47.09)	1.898 (48.21)	.165 (4.19)
	-1 P-0.3L-TS-2A	1.842 (46.79)	1.886 (47.90)	.149 (3.78)
25	1.6250	1.941 (49.30)	1.984 (50.39)	.165 (4.19)
	-1 P-0.3L-TS-2A	1.929 (49.00)	1.972 (50.09)	.149 (3.78)

1. Crimp removable socket contacts to conform to M39029/57-359 (size 12) M39029/57-358 (size 16), M39029/57-357 (size 20) and M39029/57-354 (size 22D) contacts required to fully populate rear, plus spares as required by mil-spec, are shipped loose with the connector.